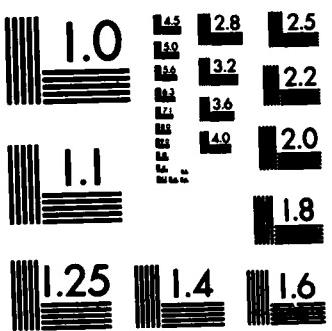


RD-R123 360 12831D LANCE MISSILE NUMBER 4581 ROUND NUMBER 388-MSL 5 1/1
NOVEMBER 1982(U) ARMY ELECTRONICS RESEARCH AND
DEVELOPMENT COMMAND WSMR NM ATM. D C KELLER NOV 82
UNCLASSIFIED ERADCOM/ASL/DR-1272 F/G 4/2 NL

END
FILED
10/82



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

AD A123360

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DR 1272	2. GOVT ACCESSION NO. AD-4123 360	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) 12831D LANCE Missile Number 4581 Round Number 380-MSL	5. TYPE OF REPORT & PERIOD COVERED	
	6. PERFORMING ORG. REPORT NUMBER	
7. AUTHOR(s) White Sands Meteorological Team	8. CONTRACT OR GRANT NUMBER(s) DA Task 1F665702D127-02	
9. PERFORMING ORGANIZATION NAME AND ADDRESS	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS	
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Electronics Research & Development Cmd Atmospheric Sciences Laboratory White Sands Missile Range, New Mexico 88002	12. REPORT DATE November 1982	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) US Army Electronics Research and Development Cmd Adelphi, MD 20783	13. NUMBER OF PAGES 24	
16. DISTRIBUTION STATEMENT (of this Report)	15. SECURITY CLASS. (of this report) UNCLASSIFIED	
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) Approved for public release; distribution unlimited.	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE	
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 12831D LANCE, Missile Number 4581, Round Number 380-MSL are presented in tabular form.		

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INTRODUCTION

12831D LANCE, Missile Number 4581, Round Number 380-MSL, was launched from LC-33 White Sands Missile Range (WSMR), New Mexico, at 0830:04 MST. 05 Nov 82. The scheduled launch time was 0830 MST.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

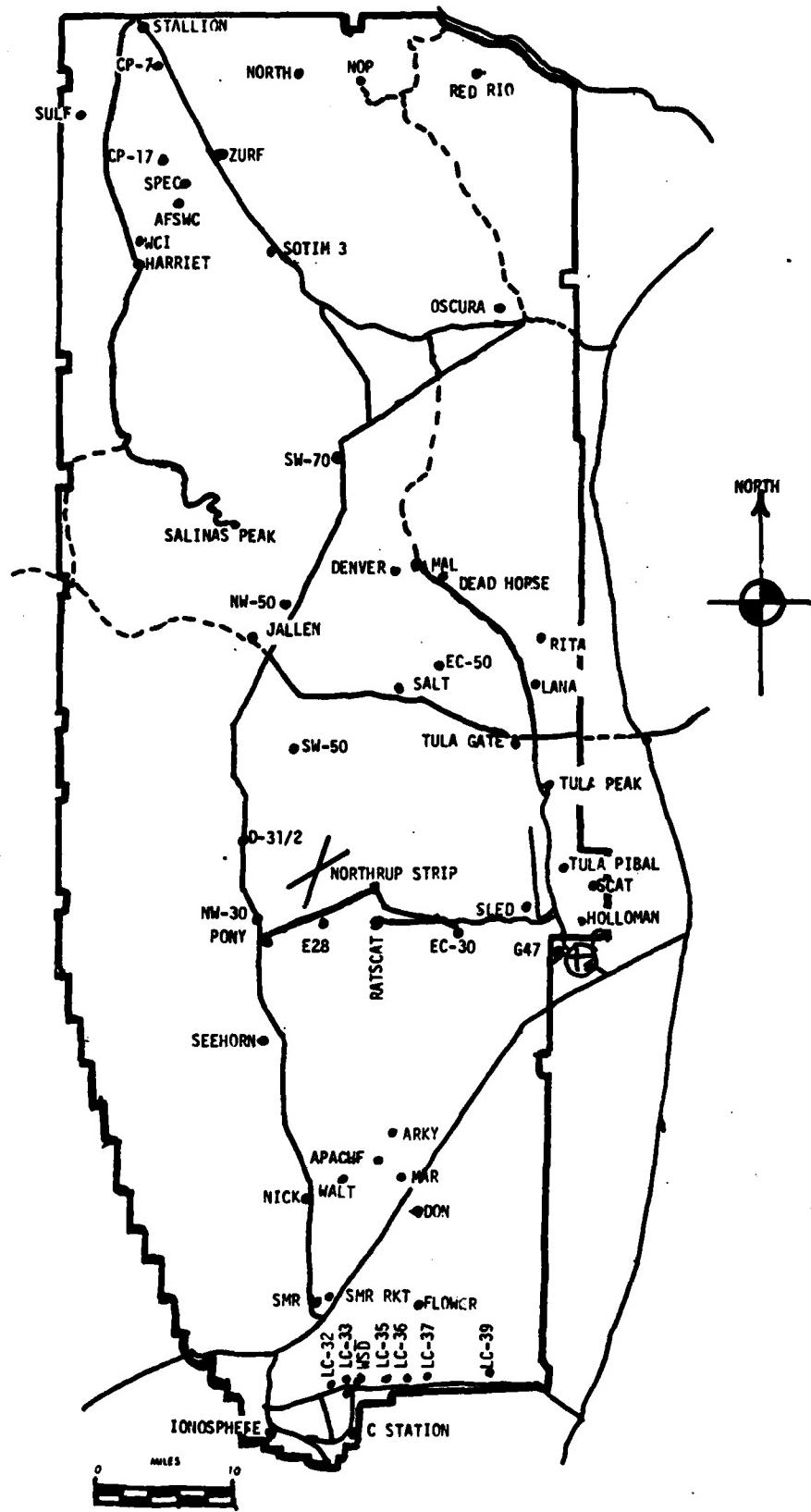
(1) Low level wind data were obtained from a pilot-balloon observation at:

SITE AND ALTITUDE
WSD 3km

(2) Air structure data (rawinsonde) were collected at the following Met Sites.

SITE AND TIME
WSD 0830 MST (Launch area)
STALLION 0930 MST (Impact area)

WSMR METEOROLOGICAL SITES



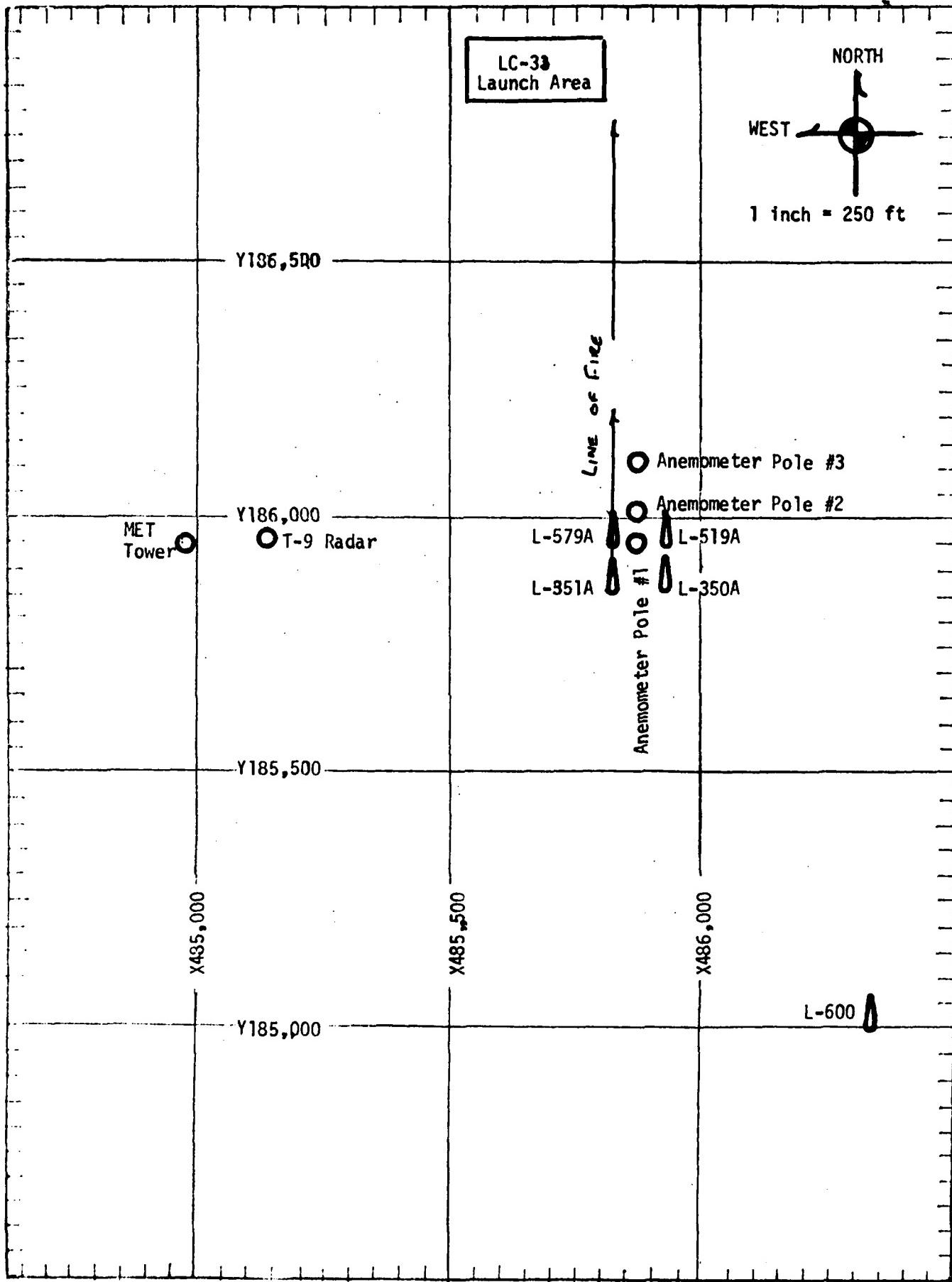


TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T -30		CAL11	T -30	347	02	T -30	357	02
T -20		CAL11	T -20	353	01	T -20	358	03
T -10		CAL11	T -10	011	02	T -10	358	03
T 0.0		CAL11	T 0.0	011	02	T 0.0	358	03
T +10		CAL11	T +10	357	03	T +10	001	03

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T -30	357	01	T -30	351	01
T -20	020	02	T -20	339	02
T -10	348	03	T -10	357	02
T 0.0	003	03	T 0.0	002	03
T +10	009	02	T +10	356	02

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T -30	358	02	T -30	356	03
T -20	358	02	T -20	006	04
T -10	359	02	T -10	356	05
T 0.0	001	03	T 0.0	353	05
T +10	008	03	T +10	353	05

PILOT BALLOON MEASURED WIND DATA

TABLE 4

RELEASED FROM VSD

DATE 5 Nov 32

TIME 0830

ASIMMETRIC (WSW) = 433,852.29 = 184,032.45 = 3,903.75

REPORTS ARE METERS AGL X FEET ASL

HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS	HEIGHT AGL	DIRECTION DEGREES	SPEED KNOTS
SFC	330	02	1300	225	12			
60	MISG	MISG	1360	232	12			
120	MISG	MISG	1920	223	11			
130	350	05	1930	235	12			
240	357	04	2040	241	10			
300	193	03	2100	223	12			
360	215	02	2160	229	10			
420	193	02	2220	223	11			
430	175	04	2280	232	11			
540	168	05	2340	233	13			
600	132	03	2400	240	11			
660	172	03	2460	244	10			
720	153	03	2520	245	12			
730	176	03	2530	263	13			
840	165	04	2640	267	14			
900	194	06	2700	272	14			
960	139	09	2760	262	15			
1020	195	12	2820	270	17			
1030	197	12	2830	276	13			
1140	201	12	2940	272	13			
1200	206	12	3000	273	19			
1260	206	11						
1320	185	12						
1330	173	12						
1440	139	11						
1500	200	13						
1560	217	12						
1620	205	12						
1630	219	11						
1740	219	12						

TABLE 5

COMPUTER MET MESSAGES

05 Nov 82

WSD 0830 MST	STALLION 0930 MST
METCM1324064	METCM1338067
051550122836	051650151855
00587002 27810386	00000000 28460855
01626004 27980875	01357004 28370845
02337002 28250849	02339004 28160820
03312006 28240809	03400013 28120731
04347012 28310761	04429013 28040735
05398011 28040717	05425012 27770691
06414012 27630674	06439015 27420650
07473015 27420634	07428014 27060611
08500018 27130595	08465019 27070573
09501025 26810559	09484023 27180538
10492029 26480524	10462025 26360505
11457021 26180492	11441027 25850473
12441023 25570445	12464031 25260428
13456034 24670389	13459036 24520373
14471033 23810338	14445033 23540324
15492047 23150292	
16499055 22740252	
17504061 22310217	
18505053 21730186	
19516050 21300159	
20493040 21040135	
21508033 20700115	
22472020 20440097	
23492008 20720083	
24425009 20970070	
25396010 21370060	
26379007 21440051	

STATION ALTITUDE 3989.00 FEET MSL
5 NOV. 1962 0831 HRS MST
ASCENSION NO. 543

SIGNIFICANT LEVEL DATA
3090020543
WHITE SANDS
TABLE 6

GEODETIC COORDINATES
32°40'43" LAT UEG
106°37'33" LON UEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT
885.6	3989.0	4.2	-2.6
877.6	4231.8	4.8	-6.7
870.0	4441.2	7.8	-4.9
850.0	5097.2	9.1	-6.7
807.0	6507.6	8.6	-10.8
769.0	7820.6	10.4	-15.9
725.2	9490.0	7.9	-17.9
700.0	10360.4	5.2	-18.5
649.8	12351.0	1.7	-20.0
624.2	13412.5	.3	-22.5
508.2	18727.8	-9.9	-30.3
500.0	19139.9	-10.5	-32.8
461.6	21145.0	-15.0	-33.9
400.0	24639.0	-25.1	-39.3
387.4	25402.3	-26.4	-39.7
364.7	26126.8	-30.5	-36.9
339.7	28473.3	-34.9	-40.7
331.0	29067.1	-36.7	-42.1
306.9	30779.9	-39.7	-46.3
300.0	31291.4	-40.1	
289.1	32197.2	-42.1	
275.9	33156.4	-44.5	
269.9	33640.4	-45.4	
257.9	34640.2	-45.1	
250.0	35324.3	-45.3	
229.7	37177.0	-47.5	
200.0	40151.3	-53.6	
167.7	43337.7	-59.1	
150.0	46131.3	-61.3	
144.5	46895.6	-61.3	
131.1	48877.1	-63.4	
114.9	51534.6	-65.8	
103.1	53686.0	-69.6	
100.0	54286.6	-69.6	
84.5	57631.3	-65.8	
77.7	59313.3	-65.8	
70.0	61417.0	-63.6	
57.9	65313.4	-58.2	
55.1	66341.2	-59.5	
50.0	68355.4	-58.2	

STATION ALTITUDE 3989.00 FEET MSL
5 NOV. 1943 0830 HRS MST
ASCENSION NO. 543

SIGNIFICANT LEVEL DATA
3090020543
WHITE SANDS
TABLE 6 Cont'd

GEODETIC COORDINATES
32°40'0" LAT DEG
106°37'0" LON UEG

PRESSURE ALMETERS MILLIBARS	ALTIMETER FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEWP-POINT	DEGREES CENTIGRADE	
46.1	70040.6	-59.3		
40.3	72557.4	-54.2		
30.0	79120.5	-53.9		
23.9	83295.2	-49.8		
20.0	87867.0	-48.1		
18.5	89574.0	-46.6		
15.7	93177.7	-46.9		
11.5	100100.4	-41.1		
10.0	103278.9	-36.7		
8.1	108147.8	-33.8		

STATION ALTITUDE 3489.00 FEET MSL
5 NOV. 02 0830 HRS HST
ASCENSION NO. 543

UPPER AIR DATA
3000020543
WHITE SANDS
TABLE 7

GEODETIC COORDINATES
32.40043 LAT DEG
196.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	AIR DEPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF WIND DATA MILES/HOUR	WIND DIRECTION DEGREES (TH)	SPEED KNOTS	INDEX OF REFRACTION
3909.0	985.6	4.2	-2.6	61.0	1110.0	649.5	330.0	1.9	1.000272
4000.0	985.2	4.2	-2.6	60.2	1109.4	649.5	329.6	1.9	1.000272
4500.0	868.9	7.9	-5.1	39.3	1075.0	653.7	262.1	.6	1.000260
5000.0	853.1	8.9	-6.4	33.2	1051.8	654.8	186.4	1.8	1.000252
5500.0	837.5	9.0	-7.8	29.7	1032.6	654.8	178.7	3.5	1.000246
6000.0	822.2	8.8	-9.2	26.9	1014.6	654.6	175.5	5.3	1.000241
6500.0	807.2	8.6	-10.8	24.0	996.8	654.3	179.6	6.3	1.000235
7000.0	792.5	9.3	-12.3	20.2	976.5	655.1	166.4	7.6	1.000229
7500.0	778.1	10.0	-14.3	16.4	956.9	655.8	195.9	9.3	1.000223
8000.0	763.9	10.1	-16.1	14.0	938.7	656.0	198.1	10.8	1.000217
8500.0	750.0	9.4	-16.7	14.0	924.0	655.1	199.7	11.8	1.000214
9000.0	736.4	8.6	-17.3	14.0	909.6	654.2	205.2	11.7	1.000210
9500.0	722.9	7.9	-17.9	14.0	895.5	653.3	212.7	11.5	1.000207
10000.0	709.6	6.3	-18.2	15.2	883.9	651.5	222.3	11.3	1.000204
10500.0	696.6	5.0	-18.6	16.1	871.8	649.9	228.6	11.3	1.000201
11000.0	683.6	4.1	-19.0	16.6	858.3	648.9	232.7	11.2	1.000198
11500.0	670.9	3.2	-19.4	17.1	845.1	647.9	239.6	11.3	1.000195
12000.0	658.1	2.3	-19.7	17.6	832.0	646.8	247.6	11.6	1.000192
12500.0	646.1	1.5	-20.4	17.7	819.0	645.9	258.6	13.1	1.000188
13000.0	634.0	.8	-21.5	16.8	805.6	645.1	267.5	15.0	1.000185
13500.0	622.1	.1	-22.6	16.0	792.5	644.2	272.3	16.3	1.000182
14000.0	610.2	-.8	-23.4	16.1	780.1	643.1	276.3	17.6	1.000179
14500.0	598.5	-1.8	-24.1	16.2	767.9	641.9	279.6	18.3	1.000176
15000.0	587.0	-2.7	-24.8	16.3	755.9	640.8	282.0	19.4	1.000173
15500.0	575.8	-3.7	-25.5	16.4	744.1	639.6	282.2	21.4	1.000170
16000.0	564.8	-4.7	-26.3	16.5	732.4	638.5	282.0	23.8	1.000167
16500.0	553.9	-5.6	-27.0	16.6	721.0	637.3	281.2	26.8	1.000164
17000.0	543.3	-6.6	-27.7	16.7	709.7	636.2	280.2	28.6	1.000161
17500.0	532.9	-7.5	-28.5	16.8	698.7	635.0	278.8	29.6	1.000159
18000.0	522.7	-8.5	-29.2	16.9	687.8	633.9	276.1	27.3	1.000156
18500.0	512.7	-9.5	-29.9	17.0	677.1	632.7	271.8	23.5	1.000154
19000.0	502.8	-10.3	-31.9	15.0	669.1	631.7	265.1	21.4	1.000151
19500.0	492.9	-11.3	-32.9	14.7	655.6	630.5	257.3	20.2	1.000148
20000.0	483.2	-12.4	-33.2	15.7	645.4	629.1	253.6	23.0	1.000146
20500.0	473.6	-13.6	-33.5	16.7	635.4	627.8	250.9	25.6	1.000144
21000.0	464.3	-14.7	-33.8	17.7	625.6	626.4	249.1	26.8	1.000141
21500.0	454.9	-16.0	-34.4	18.7	616.2	624.8	247.9	27.8	1.000139
22000.0	445.7	-17.5	-35.1	19.7	607.1	623.0	247.0	28.1	1.000137
22500.0	436.7	-18.9	-35.8	20.7	598.2	621.2	248.0	28.7	1.000135
23000.0	427.8	-20.4	-36.6	21.7	589.4	619.5	248.4	29.5	1.000133

STATION ALTITUDE 3989.00 FT. T MSL
5 NOV. 62 0830 HRS MST
ASCENSION NO. 543

UPPER AIR DATA
3070020545
WHITE SANDS
TABLE 7 Cont'd

GEOGRAPHIC COORDINATES
32°40'43 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPLASH OF SOUND KNOTS	WIND DATA DIRECTION (IN)	INDEX OF REFRACTION
23500.0	419.1	-21.8	-37.4	22.7	580.8	617.7	.48.2
24000.0	410.6	-23.3	-38.2	23.7	572.3	615.9	.47.4
24500.0	402.3	-24.7	-39.1	24.7	564.0	614.1	.49.2
25000.0	394.0	-25.7	-39.5	25.9	554.6	612.9	.51.9
25500.0	385.8	-26.7	-39.4	26.8	545.2	611.7	.57.4
26000.0	377.7	-28.1	-38.0	37.9	536.9	609.9	.63.1
26500.0	369.5	-29.6	-37.2	47.0	528.7	608.1	.65.5
27000.0	362.0	-31.0	-37.3	53.2	520.6	606.4	.70.7
27500.0	354.3	-32.3	-38.5	53.8	512.3	604.7	.66.5
28000.0	346.7	-33.6	-39.6	54.4	504.2	603.0	.65.2
28500.0	339.3	-35.0	-40.8	56.1	496.2	601.3	.63.9
29000.0	332.0	-36.5	-41.9	56.8	488.6	599.4	.65.1
29500.0	324.7	-37.5	-43.1	55.0	479.9	598.1	.64.1
30000.0	317.6	-38.3	-44.3	52.6	471.2	597.0	.67.5
30500.0	310.7	-39.2	-45.6	50.3	462.6	595.9	.71.1
31000.0	303.9	-39.9	-51.3	27.9**	453.8	595.0	.74.7
31500.0	297.2	-40.6			445.2	594.1	.77.0
32000.0	290.6	-41.7			437.4	592.7	.77.6
32500.0	284.2	-42.9			429.9	591.2	.78.2
33000.0	277.9	-44.1			422.6	589.6	.78.5
33500.0	271.6	-45.1			415.0	588.3	.78.7
34000.0	265.5	-45.3			405.9	588.1	.79.1
34500.0	259.5	-45.1			396.6	588.3	.79.8
35000.0	253.7	-45.2			387.7	588.2	.80.2
35500.0	248.0	-45.5			379.5	587.8	.80.7
36000.0	242.4	-46.1			371.9	587.0	.80.5
36500.0	236.9	-46.7			364.5	586.3	.80.4
37000.0	231.6	-47.3			357.2	585.5	.81.1
37500.0	226.3	-48.2			350.4	584.4	.81.8
38000.0	221.1	-49.2			343.9	583.0	.82.6
38500.0	216.0	-50.2			337.5	581.7	.83.3
39000.0	211.0	-51.2			331.3	580.3	.83.8
39500.0	206.2	-52.3			325.1	579.0	.84.5
40000.0	201.4	-53.3			319.1	577.7	.85.2
40500.0	196.7	-54.1			312.8	576.6	.84.8
41000.0	192.1	-54.9			306.5	575.6	.84.5
41500.0	187.5	-55.6			300.3	574.6	.84.3
42000.0	183.1	-56.4			294.2	573.6	.85.9
42500.0	178.8	-57.1			288.3	572.6	.85.5
43000.0	174.5	-57.9			282.4	571.6	.84.0

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.00 FEET mSL
 5 NOV. 62 0830 HRS NST
 ASCENSION NO. 543

UPPER AIR DATA
 3030020543
 WHITE SANDS
 TABLE 7 Cont'd

GEOMETRIC ALTITUDE mSL FEE	PRESSURE MILLIBARS	TEMPERATURE AIR DEPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CURIC METER	SPEED OF SOUND KNOTS	WIND DATA IRLCTION MILEGLES(TN)	SPEED KIOTS	INDEX OF REFRACTION
45500.0	170.4	-58.6		276.7	570.6	284.8	54.4	1.000062
44000.0	160.4	-59.3		271.0	569.0	287.4	52.3	1.000060
44500.0	162.4	-59.7		265.1	569.1	290.0	50.3	1.000059
45000.0	158.5	-60.2		259.3	568.5	290.9	48.7	1.000058
45500.0	154.7	-60.7		253.6	567.0	291.1	47.2	1.000056
46000.0	151.0	-61.2		248.1	567.2	289.6	45.6	1.000055
46500.0	147.3	-61.3		242.3	567.0	287.7	43.7	1.000054
47000.0	143.8	-61.4		236.5	566.9	284.6	41.4	1.000053
47500.0	140.3	-61.9		231.4	566.2	282.1	40.2	1.000052
48000.0	136.9	-62.5		226.3	565.5	280.6	40.0	1.000050
48500.0	133.6	-63.0		221.4	564.8	280.6	39.6	1.000049
49000.0	130.3	-63.5		216.5	564.1	281.7	39.0	1.000048
49500.0	127.1	-64.0		211.7	563.5	283.1	38.0	1.000047
50000.0	124.0	-64.4		206.9	562.9	284.7	36.9	1.000046
50500.0	121.0	-64.9		202.3	562.2	285.5	35.7	1.000045
51000.0	118.0	-65.3		197.8	561.6	286.0	34.5	1.000044
51500.0	115.1	-65.8		193.3	561.0	285.7	32.6	1.000043
52000.0	112.2	-66.6		169.3	559.9	285.2	30.6	1.000042
52500.0	109.4	-67.5		165.4	558.7	284.5	29.1	1.000041
53000.0	106.7	-68.4		161.0	557.5	283.7	27.6	1.000040
53500.0	104.1	-69.3		177.8	556.3	281.1	25.5	1.000040
54000.0	101.5	-69.6		173.7	555.8	277.3	23.2	1.000039
54500.0	98.9	-69.4		169.1	556.1	270.2	21.3	1.000038
55000.0	96.5	-68.8		164.4	556.9	260.7	20.0	1.000037
55500.0	94.1	-68.2		159.9	557.7	255.5	19.2	1.000036
56000.0	91.7	-67.7		155.5	558.5	254.3	18.3	1.000035
56500.0	89.3	-67.1		151.2	559.2	253.8	16.9	1.000034
57000.0	87.0	-66.5		147.1	560.0	254.2	15.1	1.000033
57500.0	85.1	-65.9		143.0	560.8	254.5	12.4	1.000032
58000.0	83.0	-65.8		139.4	561.0	272.9	8.9	1.000031
58500.0	80.9	-65.8		135.9	561.0	294.7	6.6	1.000030
59000.0	78.9	-65.8		132.6	561.0	317.6	5.6	1.000029
59500.0	77.0	-65.6		129.2	561.2	350.9	5.0	1.000028
60000.0	75.1	-65.1		125.7	562.0	308.7	3.6	1.000027
60500.0	73.3	-64.6		122.3	562.7	298.0	3.7	1.000027
61000.0	71.5	-64.0		119.1	563.4	247.2	6.6	1.000027
61500.0	69.7	-63.5		115.4	564.1	239.7	9.8	1.000026
62000.0	68.0	-62.8		112.7	565.0	242.6	12.6	1.000025
62500.0	66.4	-62.1		109.6	566.0	244.4	15.5	1.000024
63000.0	64.8	-61.4		106.6	566.9	244.7	14.2	1.000024

STATION ALTITUDE 3989.0 FT T.SL
5 NOV. 1962 0830 HRS MST
ASCENSION NO. 543

UPPER AIR DATA
3090020543
WHITE SANDS

TABLE 7 Cont'd

GEODETIC COORDINATES
32°40'04.3 LAT DEG
106°37'03.3 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRT PRESSURE MILLIBARS	TEMPERATURE °R	REL HUM. PERCENT	REL HUM. PERCENT	DENSITY GM/CURIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
63500.0	65.2	-60.7			103.7	567.8	244.8	11.9	1.000023
64000.0	61.7	-70.0			100.9	568.7	237.0	9.5	1.000022
64500.0	60.2	-59.3			98.1	569.7	218.0	7.5	1.000022
65000.0	59.8	-58.6			95.5	570.6	200.2	6.9	1.000021
65500.0	57.4	-58.4			93.1	570.9	195.1	7.1	1.000021
66000.0	56.0	-59.1			91.1	570.0	192.3	7.3	1.000020
66500.0	54.7	-59.4			89.1	569.6	200.3	7.5	1.000020
67000.0	53.4	-59.1			86.9	570.0	207.7	7.8	1.000019
67500.0	52.1	-58.8			84.7	570.4	211.0	8.6	1.000019
68000.0	50.9	-58.4			82.5	570.9	213.4	9.5	1.000018
68500.0	49.7	-58.3			80.5	571.0	211.8	10.7	1.000018
69000.0	48.5	-58.6			78.7	570.6	208.8	12.1	1.000018
69500.0	47.3	-58.9			77.0	570.2	208.0	12.3	1.000017
70000.0	46.2	-59.3			75.2	569.7	209.8	10.9	1.000017
70500.0	45.1	-58.5			73.2	570.8	214.2	9.6	1.000016
71000.0	44.0	-57.6			71.2	572.0	234.4	9.7	1.000016
71500.0	43.0	-56.7			69.2	573.2	252.0	10.9	1.000015
72000.0	42.0	-55.8			67.3	574.4	254.9	13.0	1.000015
72500.0	41.0	-54.8			65.4	575.6	254.5	15.2	1.000015
73000.0	40.0	-54.2			63.7	576.5	253.4	16.0	1.000014
73500.0	39.1	-54.2			62.2	576.5	251.0	15.2	1.000014
74000.0	38.2	-54.1			60.7	576.5	248.4	14.4	1.000014
74500.0	37.3	-54.1			59.3	576.6	246.7	11.9	1.000013
75000.0	36.4	-54.1			57.9	576.6	244.2	9.5	1.000013
75500.0	35.6	-54.1			56.6	576.6	237.6	6.9	1.000013
76000.0	34.8	-54.0			55.3	576.7	221.7	4.5	1.000012
76500.0	33.9	-54.0			54.0	576.7	193.9	3.1	1.000012
77000.0	33.2	-54.0			52.7	576.7	176.3	2.9	1.000012
77500.0	32.4	-54.0			51.5	576.8	157.5	2.9	1.000011
78000.0	31.6	-54.0			50.3	576.8	207.8	2.4	1.000011
78500.0	30.9	-53.9			49.1	576.8	247.6	3.8	1.000010
79000.0	30.2	-53.9			47.9	576.8	259.2	6.2	1.000010
79500.0	29.5	-53.6			46.8	577.3	262.0	9.0	1.000010
80000.0	28.8	-53.2			45.6	577.8	263.4	11.7	1.000010
80500.0	28.1	-52.7			44.5	578.4	254.0	12.2	1.000010
81000.0	27.5	-52.3			43.4	578.9	245.2	13.0	1.000010
81500.0	26.9	-51.9			42.3	579.5	237.3	14.0	1.000009
82000.0	26.2	-51.5			41.2	580.0	230.1	15.1	1.000009
82500.0	25.6	-51.1			40.2	580.6	224.1	16.5	1.000009
83000.0	25.0	-50.6			39.2	581.1	221.2	16.9	1.000009

STATION ALTITUDE 3989.00 FT, T MSL
5 NOV. '42 0837 HRS PST
ASCENSION NO. 543

UPPER AIR DATA
30q0020Q45
WHITE SANDS

TABLE 7 Cont'd

GEOMETRIC PRESSURE ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CURIC METER	SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
85500.0	24.5	-50.2	38.2	581.7	218.7	17.2	1.000009
84100.0	23.9	-49.8	37.5	582.2	218.7	17.2	1.000008
84500.0	23.4	-49.6	36.4	582.5	222.6	16.4	1.000008
85100.0	22.8	-49.4	35.5	582.8	227.2	15.7	1.000008
85500.0	22.3	-49.1	34.7	583.1	225.1	15.3	1.000008
86100.0	21.8	-48.9	33.9	583.4	243.9	15.1	1.000008
86500.0	21.3	-48.7	33.1	583.7	250.9	14.7	1.000007
87100.0	20.8	-48.5	32.3	583.9	254.2	12.6	1.000007
87500.0	20.3	-48.3	31.5	584.2	258.6	10.7	1.000007
88100.0	19.9	-48.0	30.8	584.6	265.3	8.4	1.000007
88500.0	19.4	-47.5	30.0	585.2	276.4	6.2	1.000007
89000.0	19.0	-47.1	29.3	585.7	291.1	4.8	1.000007
89500.0	18.6	-46.7	28.6	586.3	280.6	5.9	1.000006
90000.0	18.1	-46.6	27.9	586.3	273.4	7.0	1.000006
90500.0	17.7	-46.7	27.3	586.3	266.4	8.7	1.000006
91000.0	17.3	-46.7	26.7	586.2	260.4	10.8	1.000006
91500.0	16.9	-46.8	26.1	586.2	256.4	13.1	1.000006
92000.0	16.6	-46.8	25.5	586.1	253.6	14.2	1.000006
92500.0	16.2	-46.8	24.9	586.1	251.7	14.7	1.000006
93000.0	15.8	-46.9	24.4	586.0	249.7	15.2	1.000005
93500.0	15.5	-46.6	23.8	586.3	249.2	15.3	1.000005
94000.0	15.1	-46.2	23.2	586.9	249.1	15.3	1.000005
94500.0	14.8	-45.6	22.7	587.4	248.9	15.2	1.000005
95000.0	14.5	-45.4	22.1	588.0	241.4	14.0	1.000005
95500.0	14.1	-45.0	21.6	588.5	232.0	13.0	1.000005
96000.0	13.8	-44.5	21.1	589.0	221.5	12.5	1.000004
96500.0	13.5	-44.1	20.6	589.6	214.9	13.0	1.000005
97000.0	13.2	-43.7	20.1	590.1	208.9	13.7	1.000004
97500.0	12.9	-43.3	19.6	590.7	206.0	14.5	1.000004
98000.0	12.6	-42.9	19.1	591.2	217.2	15.5	1.000004
98500.0	12.4	-42.4	18.7	591.7	226.1	17.0	1.000004
99000.0	12.1	-42.0	18.2	592.3	232.5	19.1	1.000004
99500.0	11.8	-41.6	17.8	592.8	235.3	21.8	1.000004
100000.0	11.6	-41.2	17.3	593.3	237.6	24.5	1.000004
100500.0	11.3	-40.5	16.9	594.2	239.4	26.8	1.000004
101000.0	11.1	-39.9	16.5	595.0	241.0	28.4	1.000004
101500.0	10.8	-39.2	16.1	595.9	242.4	30.0	1.000004
102000.0	10.6	-38.5	15.7	596.8	245.7	30.9	1.000003
102500.0	10.3	-37.8	15.3	597.7	245.0	31.2	1.000003
103000.0	10.1	-37.1	14.9	598.6	246.3	31.5	1.000003

STATION ALTITUDE 3989.00 FT, T MSL
 540V. 62 0830 HRS, FST
 ASCENSIOIN 110. 543

UPPER AIR DATA
 303002054J
 WHITE SANDS
 TABLE 7 Cont'd

GEOGRAPHIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	KELVIN. DEGREES	DENSITY GM/CURIC PERCENT	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	INDEX OF REFRACTION
10500.0	9.9	-36.6	14.6	599.2	247.3	32.5	1.000003
10400.0	9.7	-36.3	14.5	599.6	248.1	34.0	1.000003
104500.0	9.5	-36.0	13.9	600.0	248.9	35.6	1.000003
105500.0	9.3	-35.7	13.6	600.3	249.2	37.9	1.000003
10500.0	9.1	-35.4	13.3	600.7	249.4	40.7	1.000003
106000.0	8.9	-35.1	13.0	601.1	249.5	43.5	1.000003
106500.0	8.7	-34.8	12.7	601.5			1.000003
107000.0	8.5	-34.5	12.4	601.9			1.000003
107500.0	8.3	-34.2	12.1	602.2			1.000003
108000.0	8.2	-33.9	11.9	602.6			1.000003

STATION ALTITUDE 3989.00 FT. MSL
 5 NOV. 1962 0830 HRS PST
 ASSEMBLY NO. 543

MAINTAIN LEVELS
 3090020543
 WHITE SANDS
 TABLE 3

GEODETIC COORDINATES
 32°40'04.3 LAT DEG
 106°37'03.3 LON DEG

PRESSURE MILLIPARS	CLOPOTENTIAL FEET	TEMPERATURE DEGREES	AIR DEPOINT CENTIGRADE	RH. PERCENT	WIND DATA	
					DIRECTION (DEGREES TN)	SPEED KNOTS
850.0	500.0	9.1	-6.7	32.	185.4	2.2
800.0	6739.	8.9	-11.5	22.	101.2	6.9
750.0	8495.	9.4	-16.7	14.	199.7	11.8
700.0	10358.	5.2	-18.5	16.	227.5	11.3
650.0	12329.	1.7	-20.0	18.	255.2	12.5
600.0	14435.	-1.7	-24.0	16.	279.2	16.2
550.0	16686.	-6.0	-27.3	17.	280.9	26.0
500.0	19113.	-10.5	-32.6	14.	263.1	21.0
450.0	21742.	-16.8	-34.6	19.	247.9	26.0
400.0	24508.	-25.1	-39.3	25.	249.9	33.8
350.0	27734.	-33.0	-39.1	54.	265.9	32.6
300.0	31229.	-40.1			276.4	42.1
250.0	35247.	-45.3			280.5	57.5
200.0	40054.	-53.6			285.1	60.2
175.0	42845.	-57.8			283.9	55.5
150.0	46007.	-61.3			289.4	45.3
125.0	49607.	-64.3			284.1	37.3
100.0	54119.	-66.6			274.4	22.1
80.0	58534.	-65.8			302.9	6.1
70.0	61206.	-63.6			240.9	9.1
60.0	64343.	-59.2			216.0	7.4
50.0	68098.	-58.2			213.0	10.2
40.0	72725.	-54.2			255.5	16.1
30.0	78782.	-53.9			259.8	6.6
25.0	82652.	-50.6			221.3	16.9
20.0	87455.	-48.1			262.7	9.3
15.0	93710.	-46.1			249.0	15.3
10.0	102718.	-36.7			246.9	31.6

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4940.00 FEET MSL
5 NOV. 82 0930 HRS MST
ASCENSION NO. 51

SIGNIFICANT LEVEL DATA
309040051 STALLION

GEODETIC COORDINATES
33.81920 LAT DEG
106.66501 LON DEG

TABLE 9

PRESSURE GEOMETRIC MILLIBARS MSL FEEt	ALTITUDE DEGREES MSL FEEt	TEMPERATURE AIR DEPOINT CENTIGRADE	REL.HUM. PERCENT
855.0	4040.0	11.0	28.0
850.0	5100.4	10.5	29.0
809.8	6416.7	7.2	32.0
780.2	7422.2	7.2	20.0
770.4	7764.5	8.9	20.0
700.0	10350.0	5.0	23.0
624.4	13376.6	-1.6	35.0
599.4	14440.9	-4.2	40.0
535.6	17178.2	-6	32.0
500.0	19147.5	-12.0	32.0
470.0	20695.4	-15.1	29.0
429.1	22935.3	-20.6	24.0
400.0	24629.8	-25.0	44.0
390.4	25209.4	-26.3	50.0
384.2	25589.5	-27.4	55.0
348.4	27879.2	-33.3	59.0
323.9	29548.6	-38.1	52.0
303.6	31003.6	-41.9	
300.0	31269.2	-42.6	

STATION ALTITUDE 4940.00 FEET ASL
 5 NOV. 62 0930 HRS MST
 ASCENSION NO. 51

UPPER AIR DATA
 300040051
 STALLION
 TABLE 10

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPONT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CURIC METER	SOUND SPEED KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
4940.0	855.0	11.0	-6.8	28.0	1046.5	657.2	0.0	0.0	1.000250
5000.0	853.1	10.8	-6.8	28.4	1044.9	657.0	217.6	.3	1.000250
5500.0	837.6	9.5	-7.2	29.9	1030.7	655.5	217.6	2.6	1.000246
6000.0	822.3	8.2	-7.8	31.1	1016.4	654.0	217.6	4.9	1.000243
6500.0	807.3	7.0	-8.6	31.0	1001.7	652.8	217.6	7.2	1.000238
7000.0	792.5	7.2	-11.5	25.0	983.6	652.7	220.0	9.5	1.000231
7500.0	778.0	7.6	-13.9	20.0	964.4	653.1	225.6	11.6	1.000225
8000.0	763.7	8.5	-12.9	20.3	943.4	654.2	230.0	13.4	1.000221
8500.0	749.7	7.8	-13.2	20.9	928.6	653.3	235.5	13.8	1.000217
9000.0	735.9	7.0	-13.5	21.4	914.0	652.5	239.8	14.1	1.000214
9500.0	722.4	6.3	-13.8	22.0	899.6	651.6	242.5	14.1	1.000211
10000.0	709.1	5.5	-14.1	22.6	885.5	650.7	243.1	13.2	1.000207
10500.0	696.0	4.7	-14.3	23.6	871.8	649.7	241.6	11.6	1.000204
11000.0	683.0	3.6	-14.3	25.6	856.9	648.4	241.2	11.6	1.000201
11500.0	670.3	2.5	-14.3	27.6	846.1	647.2	241.2	12.0	1.000199
12000.0	657.7	1.4	-14.4	29.5	833.6	645.9	243.6	13.5	1.000196
12500.0	645.4	.3	-14.6	31.5	821.3	644.6	245.3	15.0	1.000193
13000.0	633.3	-.6	-14.8	33.5	809.1	643.3	243.7	15.0	1.000190
13500.0	621.4	-1.9	-15.1	35.6	797.2	642.0	242.2	15.0	1.000187
14000.0	609.6	-3.1	-15.4	37.9	785.6	640.5	242.9	15.1	1.000185
14500.0	598.0	-4.1	-15.7	39.8	773.5	639.3	244.2	15.2	1.000182
15000.0	586.7	-3.5	-15.6	38.5	757.1	640.1	253.7	16.0	1.000178
15500.0	575.6	-2.9	-15.5	37.1	741.0	640.8	262.0	17.3	1.000175
16000.0	564.6	-2.3	-15.4	35.8	725.3	641.6	267.5	19.3	1.000171
16500.0	553.9	-1.7	-15.3	34.4	709.9	642.3	271.3	21.4	1.000168
17000.0	543.4	-1.1	-15.2	33.0	694.9	643.0	271.5	23.1	1.000164
17500.0	533.1	-1.4	-15.9	32.0	682.5	642.6	270.6	24.4	1.000161
18000.0	522.8	-4.6	-18.7	32.0	677.5	638.7	268.2	24.6	1.000158
18500.0	512.7	-7.8	-21.6	32.0	672.7	634.8	263.5	24.9	1.000156
19000.0	502.9	-11.0	-24.4	32.0	666.0	630.9	256.1	25.4	1.000153
19500.0	493.0	-12.7	-26.1	31.3	659.1	628.9	251.2	26.3	1.000151
20000.0	483.2	-13.7	-27.4	30.3	648.6	627.7	248.7	27.3	1.000148
20500.0	473.7	-14.7	-26.6	29.4	636.2	626.4	248.5	28.0	1.000145
21000.0	464.2	-15.8	-30.0	28.3	628.3	625.0	251.1	28.3	1.000143
21500.0	454.9	-17.1	-31.5	27.2	618.6	623.5	253.9	28.9	1.000140
22000.0	445.7	-18.3	-33.0	26.1	609.1	622.0	256.9	30.0	1.000138
22500.0	436.8	-19.5	-34.5	25.0	599.8	620.5	259.8	31.0	1.000135
23000.0	428.0	-20.8	-35.6	24.8	590.6	619.0	262.6	32.0	1.000133
23500.0	419.2	-22.1	-34.6	30.7	581.4	617.4	263.9	32.4	1.000131
24000.0	410.6	-23.4	-36.6	36.6	572.4	615.8	264.7	32.6	1.000130

STATION ALTITUDE 4940.00 FT, 1 'SL
 5 NOV. 12 0930 HRS MST
 ASCENSION NO. 51

UPPER AIR DATA
 3090040051

STALLION

TABLE 10 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	WIND SPEED, KNOTS	WIND DIRECTION, DEGREES (TN)	SPEED, KNOTS	INDEX OF REFRACTION
24500.0	402.2	-24.7	-33.7	42.5	563.6	614.2	263.8	32.8
25000.0	395.8	-25.8	-33.6	47.8	554.6	612.8	262.6	33.0
25500.0	389.7	-27.1	-32.3	61.5	545.9	611.2	260.9	33.5
26000.0	377.5	-28.5	-33.1	63.9	537.3	609.5	259.2	34.0
26500.0	369.5	-29.7	-34.6	62.6	528.7	607.9	257.1	34.4
27000.0	361.7	-31.0	-36.0	61.3	520.3	606.3	255.1	34.9
27500.0	354.1	-32.3	-37.4	60.0	512.1	604.6	253.4	34.6
28000.0	346.6	-33.6	-38.9	58.5	505.9	603.0	251.7	34.3
28500.0	339.1	-35.1	-40.6	56.4	496.1	601.2	250.3	33.7
29000.0	331.8	-36.5	-42.4	54.3	486.3	599.3	248.9	33.2
29500.0	324.6	-38.0	-44.1	52.2	480.7	597.5	248.7	33.4
30000.0	317.5	-39.3	-48.6	35.9**	472.8	595.8		1.000106
30500.0	310.5	-40.6	-55.5	18.0**	465.1	594.1		1.000104
31000.0	303.6	-41.9	-88.9	.1**	457.4	592.4		1.000102

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4940.00 FT ET MSL
 5 NOV. 82 0930LIRS NST
 ASCENSION NO. 51

MANDATORY LEVELS
 3090040051
 STALLION
 TABLE 11

GEODETIC COORDINATES
 33°01'920 LAT DEG
 106°06'501 LON LEG

PRESSURE ATOPOTENTIAL MILLIBARS	FEET	TEMPERATURE DEGREES CENTIGRAVE	AIR DEWPPOINT DEGREES CENTIGRAVE	REL.HUM. PERCENT	WIND DATA DIRECTION .DEGREES (TN)	SPEED KNOTS
850.0	5097.	10.5	-6.8	29.	217.6	.7
800.0	6741.	7.2	-10.0	28.	217.6	8.4
750.0	8485.	7.8	-13.2	21.	235.4	13.8
700.0	10341.	5.0	-14.4	23.	242.1	12.1
650.0	12309.	.7	-14.5	31.	244.8	14.5
600.0	14400.	-4.1	-15.7	40.	243.5	15.2
550.0	16663.	-1.4	-15.3	34.	271.4	22.0
500.0	19123.	-12.0	-25.3	32.	254.1	25.7
450.0	21740.	-17.7	-32.3	27.	255.5	29.5
400.0	24592.	-25.0	-33.7	44.	263.5	32.8
350.0	27726.	-33.0	-38.2	59.	252.5	34.4
300.0	31211.	-42.6				

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DT